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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/005,060 | 12/04/2001 | Hyang Yul Kim | CU-2746 RJS | 9194 |
| 26530 | 7590 | 02/20/2004 | EXAMINER | |
| LADAS & PARRY 224 SOUTH MICHIGAN AVENUE, SUITE 1200 CHICAGO, IL 60604 | | | LANDAU, MATTHEW C | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2815 | |

DATE MAILED: 02/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/005,060

Applicant(s)

KIM ET AL.

Examiner

Matthew Landau

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 2 and 4-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7 and 14 is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4 and 10-12 is/are rejected.
- 7) ☒ Claim(s) 5, 6, 8 and 9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 13 is rejected under 35 U.S.C. 102(e) as being anticipated by Matsuyama et al.

(US Pat. 6,469,765, hereinafter Matsuyama).

In regards to claim 13, Figures 3 and 16 of Matsuyama disclose a liquid crystal display device comprising: a lower substrate 800 having a lower inner surface and a lower outer surface, wherein the lower substrate is rubbed in a rubbing direction for alignment of liquid crystal molecules; a lower polarizing plate 810 formed on the lower outer surface; an upper substrate 900 having an upper inner surface and an upper outer surface, wherein the lower inner surface and the upper inner surface face each other at a distance in a substantially parallel manner; an upper polarizing plate 910 formed on the upper outer surface; a counter electrode 400 formed on a portion of the lower inner surface, wherein the counter electrode is planar and has a rectangular plate shape; an insulating layer 804 formed on the counter electrode and the lower inner surface; a pixel electrode 300 formed on a portion of the insulating layer, wherein the pixel electrode is made from a plurality of V-shaped conductors, each having a first end and a second end, symmetrically arranged with the first end of each of the V-shaped conductors connected to each other by another continuous conductor, thereby forming a V-shaped slit between two

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symmetrically arranged V-shaped conductors; a data bus line 200 formed on a portion of the insulating layer; a gate bus line 100 formed substantially perpendicular to the data bus line, wherein a noise field is formed between the gate bus line and the pixel electrode and between the gate bus line and the counter electrode, and further wherein the rubbing direction of the lower substrate substantially corresponds to the direction of the noise field (col. 24, lines 35-46). Note that the limitation "utilizing a fringe field switching (FFS) mode" is merely functional language. The claims do not define any specific structure that must be present in order to operate in FFS mode. Also, a device operating in FFS mode does not inherently possess any structural features that distinguish over the device of Matsuyama. It is considered that the device, which comprises all structural features claimed and disclosed in the instant application, is fully capable of operating in FFS mode. Therefore, the claim is anticipated.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 4, and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuyama in view of Nishida et al. (US Pat. 6,285,429, hereinafter Nishida).

In regards to claim 1, Figures 3 and 16 of Matsuyama disclose a liquid crystal display device comprising: a lower substrate 800 having a lower inner surface and a lower outer surface,

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wherein the lower substrate is rubbed in a rubbing direction for alignment of liquid crystal molecules; a lower polarizing plate 810 formed on the lower outer surface; an upper substrate 900 having an upper inner surface and an upper outer surface, wherein the lower inner surface and the upper inner surface face each other at a distance in a substantially parallel manner; an upper polarizing plate 910 formed on the upper outer surface; a counter electrode 400 formed on a portion of the lower inner surface, wherein the counter electrode is planar and has a rectangular plate shape; an insulating layer 804 formed on the counter electrode and the lower inner surface; a pixel electrode 300 formed on a portion of the insulating layer, wherein the pixel electrode is made from a plurality of V-shaped conductors, each having a first end and a second end, symmetrically arranged with the first end of each of the V-shaped conductors connected to each other by another continuous conductor, thereby forming a V-shaped slit between two symmetrically arranged V-shaped conductors; a data bus line 200 formed on a portion of the insulating layer, wherein a noise field is formed between the data bus line and the pixel electrode and between the data bus line and the counter electrode; and a gate bus line 100 formed substantially perpendicular to the data bus line on a different layer. The difference between Matsuyama and the claimed invention is the rubbing direction of the lower substrate substantially corresponds to the direction of the noise field. Figure 4a of Nishida discloses a liquid crystal display device with V-shaped pixel electrode portions wherein the rubbing direction is perpendicular to a data bus line 14 (i.e., the rubbing direction corresponds to the noise field formed between the pixel electrode and the data bus line). In view of such teaching, it would have been obvious to the ordinary artisan at the time the invention was made to modify the invention of Matsuyama by using the rubbing direction of Nishida for the purpose of

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changing the display mode of the device when no voltage is applied to the electrodes. Note that the limitation “utilizing a fringe field switching (FFS) mode” is merely functional language. The claims do not define any specific structure that must be present in order to operate in FFS mode. Also, a device operating in FFS mode does not inherently possess any structural features that distinguish over the device of Matsuyama. Therefore, it is considered that the device, which comprises all structural features claimed and disclosed in the instant application, is fully capable of operating in FFS mode.

In regards to claim 2, Matsuyama discloses the counter and pixel electrodes are made of indium tin oxide (ITO) for forming the fringe field switching mode (col. 12, lines 35-37 and col. 13, lines 12-14).

In regards to claim 4, Figure 3 of Matsuyama discloses a black matrix 904 formed on the upper inner surface substantially covering the data bus line 200.

In regards to claim 10, Matsuyama discloses the upper substrate has a rubbing direction parallel to that of the lower substrate (col. 16, lines 16-20).

In regards to claim 11, Matsuyama discloses the lower polarizing plate 810 has an absorption axis perpendicular to the rubbing direction of the lower substrate 800 (col. 16, lines 53-55). The absorption axis of a polarizing plate is perpendicular to the polarizer axis; therefore Matsuyama discloses the polarizer axis corresponds to the rubbing direction.

In regards to claim 12, Matsuyama discloses the upper and lower polarizing plates (810 and 910, respectively) have absorption axes orthogonal with each other (col. 14, lines 63-65). Therefore, Matsuyama discloses the polarizer axis of the upper polarizer plate 910 has an analyzer axis perpendicular to the rubbing direction of the lower substrate.

Allowable Subject Matter

Claims 7 and 14 are allowed.

Claims 5, 6, 8, and 9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments with respect to claims 1-14 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew C. Landau whose telephone number is (703) 305-4396 or (571) 272-1731 (after 2/9/2004).

The examiner can normally be reached from 8:30 AM - 5:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (703) 308-2772. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Matthew C. Landau

Examiner

February 3, 2004



**JEROME JACKSON
PRIMARY EXAMINER**